

Applic. No.: 10/637,191
Amdt. Dated July 29, 2005
Reply to Office action of May 5, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claim 1 (currently amended). A semiconductor laser, comprising:

a vertical resonator formed by reflectors;

a photon-emitting active layer disposed between said reflectors;

at least one current diaphragm for laterally circumscribing a current flowing through said photon-emitting active layer; and

mode-selective regions extending in a vertical direction within said vertical resonator and laterally delimit said vertical resonator.

Claim 2 (original). The semiconductor laser according to claim 1, further comprising a mesa and one of said reflectors is formed in said mesa.

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Claim 3 (original). The semiconductor laser according to claim 2, wherein said mesa has a diameter of > 10 μm .

Claim 4 (original). The semiconductor laser according to claim 1, wherein said current diaphragm is formed from an oxide.

Claim 5 (original). The semiconductor laser according to claim 1, wherein said current diaphragm defines a current aperture having a given diameter of > 3 μm .

Claim 6 (original). The semiconductor laser according to claim 5, wherein said current diaphragm has a diameter of > 4 μm .

Claim 7 (original). The semiconductor laser according to claim 5, wherein said mode-selective regions define an inner opening being larger than said current aperture.

Claim 8 (currently amended). The semiconductor laser according to claim 1, wherein said mode-selective regions have [[a]] an electrical conductivity being less than [[a]] an electrical conductivity of said vertical resonator along a resonator axis.

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Claim 9 (original). The semiconductor laser according to claim 1, wherein said mode-selective regions are implantation regions.

Claim 10 (currently amended). The semiconductor laser according to claim 9, wherein said vertical resonator has an edge area and said mode-selective regions extend in said edge area and a surrounding region of said edge area of said vertical resonator.

Claim 11 (original). The semiconductor laser according to claim 1, wherein said current diaphragm is at least two current diaphragms.

Claim 12 (currently amended). The semiconductor laser according to claim 1, wherein the semiconductor laser has a multilayer structure and said mode-selective regions are formed [[in]] within said multilayer structure.